to maximize radiation absorbance by whole, undiluted blood;

irradiating a sample of whole, undiluted blood with [said plurality of] at least three of said radiation frequencies, through a depth of said sample chosen to minimize radiation scattering by whole, undiluted blood;

detecting intensities of said [plurality of] radiation frequencies, after passing through said depth of said sample, at a distance from said sample, and over a detecting area, both chosen to minimize the effect of radiation scattering by whole, undiluted blood; and

calculating concentrations of ~~each of~~ [a plurality of] at least three said constituent components of said sample of whole, undiluted blood, based upon detected intensities of said [plurality of] radiation frequencies, and upon predetermined molar extinction coefficients for each of said [plurality of] constituent components at each of said [plurality of] radiation frequencies.

Claim 11, line 2, after "said" delete --plurality of--.

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12. (Amended) A method as recited in claim 11, wherein said step of calculating comprises calculating concentrations of each of at least three said [plurality of] constituent components using the Beer-Lambert Law of absorption spectroscopy.

Claim 13, line 17, please change the word "one" to --three--.

14. (Amended) In an apparatus for calculating concentrations of hemoglobin species in whole blood, an optical device comprising:

a controllable source of monochromatic light;

a cuvette for holding a sample of whole, undiluted blood, said cuvette providing an optical absorbance path through said sample of whole, undiluted blood to minimize the effect of light scattering by said sample; [and]

a light detector positioned to receive and detect <u>forward-scattered</u> light from said source of light passing through said optical absorbance path, said light detector being positioned a distance from said cuvette [and] <u>opposite a side of said cuvette which receives said light, said detector</u> having a light detecting area, both chosen to minimize the effect of light scattering by said sample[.]<u>; and</u>

<u>a controlling and calculating unit connected to said light source and to said light detector, for controlling said light source and for calculating a concentration of at least three hemoglobin species as a function of forward-scattered light received on said light detector.</u>